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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/797,144	03/11/2004	Hideyuki Kaneko	1188-0118P	7454
2292	7590	04/05/2006	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			MULLIS, JEFFREY C	
			ART UNIT	PAPER NUMBER
			1711	

DATE MAILED: 04/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/797,144

Applicant(s)

KANEKO ET AL.

Examiner

Jeffrey C. Mullis

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1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8047-05, 6-04
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Applicant's election of the species of Example 1 in the reply filed on 1-25-06 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

With re to the restriction requirement applicants are of course correct that their claims may encompass more than omne structure selected from a block, graft or star and therefore applicants should have been permitted to elect a species containing more than one such structure. However it is noted that the instant claims also read on species having only one block graft or star structure.

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

It is noted that Example 1 contains the word "schrenk (sic, it is believed "schlenk" is intended). Correction is required.

Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "polar" is subjective and therefore unclear. Furthermore it is ambiguous as to whether a polymer chain having even a clearly polar and clearly nonpolar segment should be viewed as the terms "polar" and "nonpolar" have opposite meanings.

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The formulas V-VII in claim 7 are undefined therefore unclear.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Matyjaszewski et al. (US 2002/0183473).

Patentees in all embodiments require the polymerization of a macroinitiator with a macromonomer (note for instance the abstract). Note patent claim 11 where the macromonomer is a polyolefin and note also paragraph 230 where it is disclosed that "(T)wo approaches were taken for the preparation of a polypropylene based macroinitiator for the ATRP copolymerization of a polypropylene macromonomer with methyl methacrylate". Note paragraph 63 where the only macromonomeric polyolefins disclosed are those containing methacrylate polymerizable groups (i.e. those which would form polar methacrylate backbones as in applicants "P" superscript one) while the only macroinitiator disclosed have silicon heteroatoms or oxygen heteroatoms from bromoisobutyrate terminal macroinitiators such as would result in silicon or oxygen atom containing "X" units.

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Claims 1 and 5-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Saito et al. (US 4,292,414).

Patentees disclose a silicon tetrachloride coupled styrene butadiene radial copolymer which is subsequently grafted such as encompasses at least those of applicants materials wherein "P" is a polyolefin chain, "X" is silicon and $n=4$. Note column 11, lines 40-50.

Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito, cited above in view of either Wunsch (US 6,162,866) or Stephens (US 6,759,454).

Stephens discloses the equivalence of silicon tetrachloride and applicants nonsilicon "X" groups as coupling agents for forming coupled styrenic block copolymers at the paragraph bridging columns 7 and 8 while Wunsch has a similar disclosure at column 5, lines 30-45.

The specific "X" moieties of claim 2-4 are not disclosed by Saito. However use of such would have been obvious to a practitioner having an ordinary skill in the art at the time of the invention in the expectation of adequate results in view of the teaching of the secondary references of the equivalence of silicon tetrachloride and couplers containing applicants moieties absent any showing of surprising or unexpected results.

Claims 1-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Janssen et al. (EP 0856542, cited by applicants).

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Patentees disclose a star shaped polymer having polyolefin arms coupled via an agent having ester and amine functionality having less than 200 atoms. See for instance the reaction shown at the top of pages 16 or 20.

Claims 1-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Kennedy et al. (US 2003/0236354).

Kennedy discloses a "star polymer" in which a polyisobutylene segment (encompassing applicants' "polyolefin chain") is "directly attached to a core component" (paragraph 33) wherein the core component includes calixarene species shown in paragraph 37 such as would give rise to applicants "X" containing an ether oxygen heteroatom.

Claims 1-11 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kennedy et al. (US20030204022). Kennedy disclose a block copolymer using calixarene initiators such as would give rise to star polymers having applicants ether containing "X" moieties (paragraph 68 and 70) and requiring a polyisobutylene or other polyolefin rubber block (paragraph 72) and thus the limitations of the claims are met when applicants "n" is two or more. Applicants may argue that the limitations of the claims exclude some segments due to their limitation that not every P one is polar chain "A3" (the examiner would not agree since every macromolecular moiety attached to Kennedys' core requires a polyolefin segment and thus encompassed by applicants "A1" and furthermore the claims do not actually exclude polar moieties present attached to their polyolefin segments). However Kennedy generally forms his polyolefin segments first and therefore the limitations of the claims are certainly met by the concept of the product using Kennedys' calixarene

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core at the point that it is used to polymerize olefin monomer as the first monomer but prior to contact with subsequent monomer. Alternatively even polymerization of the calixarene core containing star block rubber of Kennedy subsequently with the non polar monomer the use of which is taught by Kennedy encompasses the instant multi branched polymer and choice from such disclosures of Kennedy would have been obvious to a practitioner having an ordinary skill in the art at the time of the invention in the expectation of adequate results, absent any showing of surprising or unexpected results.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey C. Mullis whose telephone number is 571 272 1075. The examiner can normally be reached on Tus-Friday from 9 to 6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seidleck James, can be reached on M-F. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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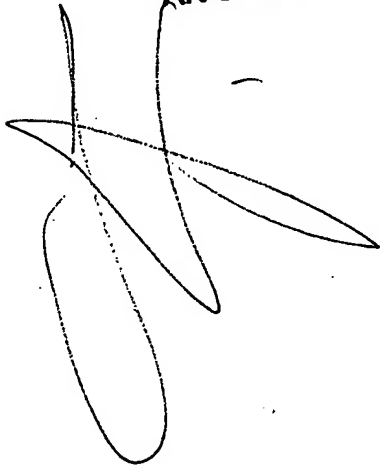
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Jeffrey C. Mullis
J Mullis
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JCM

3-29-

Jeffrey Mullis
Primary Examiner
Art Unit 1711

A large, stylized handwritten signature in black ink, consisting of several overlapping loops and a long horizontal stroke, is written over the printed name and title of the examiner.